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Contact

Melissa Weber, Director of Communications  
Phone: 320-589-6414, weberm@morris.umn.edu

Jenna Ray, Editor/Writer  
Phone: 320-589-6068, jrray@morris.umn.edu

**Wind turbine to stir up renewable energy research**

*Summary:*

(March 11, 2005)-A 230-foot wind turbine has powered its way to center stage at the new Renewable Energy Research and Demonstration Center at the University of Minnesota West Central Research and Outreach Center (WCROC) in Morris. Completed the last week in February, the turbine is a key step in integrating renewable energy into Minnesota's rural economy and strengthening renewable energy research and education in the state. It will be commissioned in a ceremony on Earth Day - April 22 - which also marks the 35th anniversary of the annual observance.

The turbine is the only large-scale wind research instrument at a public university and provides the foundation for an innovative wind-to-hydrogen project. It will supply 5.6 million kilowatt-hours (kWhr) of power each year to the nearby University of Minnesota, Morris (UMM) campus, supplying over half its annual electricity use. The turbine's commissioning will cap a week of activities at UMM and the WCROC with themes centering on renewable energy and the environment.

"Our goal is to establish systems research to stimulate the renewable energy industry and provide a model for rural communities and agricultural producers to integrate renewable energy systems into their economies," said Greg Cuomo, head of the WCROC.

The University of Minnesota Renewable Energy Research and Demonstration Center is designed as a community-scale project whose goal is to combine local production and use of renewable energy with state-of-the-art research and demonstrations focusing on wind, biomass, biofuels, anaerobic digestion and renewable hydrogen. Renewable energy research and demonstration systems under development at the center include the wind-to-hydrogen demonstration project. Other projects are:

- \* A biomass district heating and cooling system for UMM
- \* A hybrid wind and biodiesel energy system
- \* An energy "smart" solar building addition to the WCROC office complex and

\* Facilitation of a community anaerobic digester and methane pipeline system.

A mix of university, state, federal and private funding is being sought to complete these core systems. The wind-to-hydrogen project at the WCROC has received initial funding from the state Commerce Department, the Legislative Commission on Minnesota Resources (pending) and the university's Initiative for Renewable Energy and the Environment (IREE). This system will stimulate the use of renewable hydrogen in applications like fuel cells and localized fertilizer production. In the future, the facility will conduct research and demonstration projects on wind storage and on-demand renewable energy systems such as biomass and biodiesel generation, in addition to hydrogen fuel cells.

The WCROC was a pioneer in ethanol research, building Minnesota's first ethanol research facility in the early 1980s. The state's ethanol industry is now a national leader, with 14 plants producing 300 million gallons of ethanol a year and annual sales running at \$380 million.

"Our belief is that the renewable energy research and education we are doing now will deliver a great benefit to Minnesota," said Cuomo. "Renewable energy is poised to become an important part of our state and nation's energy future, and Minnesota will be a leader in this work."

The University of Minnesota Renewable Energy Research and Demonstration Center is led by the university in partnership with stakeholders in rural west-central Minnesota. IREE has provided leadership and funding to develop the research and demonstration systems. IREE is a key part of university President Robert Bruininks' Initiative on the Environment and Renewable Energy (PIERE). For more information on IREE, see [www.umn.edu/iree/](http://www.umn.edu/iree/). For more information on PIERE, see [www.umn.edu/pres/01\\_init\\_env.html/](http://www.umn.edu/pres/01_init_env.html/). For more on the Morris energy projects, see [www.coafes.umn.edu/renewable/](http://www.coafes.umn.edu/renewable/).

The WCROC, part of the university's College of Agricultural, Food and Environmental Sciences, is an agriculture-based research station emphasizing interdisciplinary research designed to improve the lives of Minnesota citizens. For more information on its programs, see [wcroc.coafes.umn.edu/](http://wcroc.coafes.umn.edu/).

The University of Minnesota, Morris is an academically rigorous public undergraduate liberal arts college. It is the only college in the Midwest named among the top three public liberal arts colleges in the nation by U.S. News & World Report in its 2005 rankings of America's Best Colleges. For more information about UMM, see [www.morris.umn.edu/](http://www.morris.umn.edu/).

Through personal and academic discovery, the University of Minnesota, Morris provides opportunities for students to grow intellectually, engage in community, experience environmental stewardship and celebrate diversity. A renewable and sustainable educational experience, Morris prepares graduates for careers, for advanced degrees, for lifelong learning, for work world flexibility in the future, and for global citizenship. Learn more about Morris at [morris.umn.edu](http://morris.umn.edu) or call 888-866-3382.